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KINDER MORGAN LIQUIDS TERMINALS, LLC

LINNTON TERMINAL

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STORM WATER POLLUTION CONTROL PLAN
NPDES GENERAL PERMIT NO. 1200-Z
FILE NO. 32300

Revised 02/07/08

TABLE OF CONTENTS

TABLES

FIGURES

STORM WATER POLLUTION CONTROL PLAN

1.0 INTRODUCTION

This Storm Water Pollution Control Plan (SWPCP) is developed in compliance with the Oregon Department of Environmental Quality (ODEQ) National Pollutant Discharge Elimination System (NPDES) permit system requirements for discharges associated with storm water runoff. These conditions directly apply to NPDES General Permit Number 1200-Z for the Kinder Morgan Liquids Terminals, LLC (KMLT) Linnton Terminal. The purpose of the SWPCP is to describe the various actions this site will undertake in order to prevent the contamination of storm water discharges and comply with the conditions of the permit. Required elements and general descriptions of the plan are listed below.

2.0 FACILITY DESCRIPTION

2.1 Facility Location

The KMLT Linnton Terminal is located at 11400 NW St. Helens Road in Portland, Oregon (Figure 1). The nearest surface water body is the Willamette River. It is located approximately 10 yards to the east of the facility. The Linnton Terminal includes a barge loading dock adjacent to the eastern boundary of the facility with access to the river.

2.2 Facility Site Description

The Linnton Terminal occupies approximately 17 acres of land along the western bank of the Willamette River. Property improvements consist of: office and warehouse buildings, parking lots, roadways, 33 steel above ground storage tanks, truck loading racks, a railcar unloading rack, a loading dock on the Willamette River, piping and manifold systems and associated equipment, and storm water drainage system (Figure 2).

The storm water system directs water from the area near the loading racks, office, and warehouse buildings to an oil-water separator (Basin A; see Figure 2). Storm water from both the upper and lower tank containment areas collects in a catch basin located in the lower yard, which in turn drains to a second oil-water separator (Basin B). The dock area drains to a batch tank which is then pumped to the oil-water separator in Basin A. Storm water from both oil-water separators is pumped to a temporary holding tank, Tank 3034. Under normal circumstances, the water that collects in Tank 3034 is sampled in the tank prior to batch discharge to the Willamette River. However, if the capacity of Tank 3034 is exceeded, storm water is discharged directly from the two oil-water separators to the Willamette River following visual inspection.

By observing the extent of paved areas, buildings, roads, and structures in relation to the entire facility area, the amount of impervious area in each basin was estimated. The total area in Basin A is approximately 166,000 square feet, of which approximately 146,000 square feet is impervious; Basin B covers approximately 300,500 square feet, of which an estimated 25,000 square feet is impervious. The potential for sediment erosion is minimized by gravel cover and/or compaction of exposed earthen areas, coating secondary containment berms, and asphalting key roads and traffic areas.

2.3 Facility Operation

The Linnton Terminal is a tank farm used to store petroleum products such as: diesel fuel, gasoline, ethanol and other fuel additives. Products are primarily shipped in and out of the facility via a network of pipelines, but are also transported by barge. The terminal is fully fenced and secured, and is monitored 24 hours per day, 365 days per year by trained operational staff and security personnel.

The Linnton Terminal is equipped with an Interim Remedial Action Measures (IRAM) Area Containment System which treats extracted petroleum-impacted groundwater from beneath the facility and discharges to the Willamette River under a 1500-A General NPDES discharge permit. The IRAM groundwater extraction wells are shown on Figure 2.

The generation of process or contact water at the Linnton Terminal is limited and is primarily generated through tank bottom water draws from the aboveground storage tanks. This water is either conveyed with product to the product owners or is disposed of at an approved offsite facility.

2.4 Facility Storm Water Drainage System

The facility storm water drainage system consists of secondary containment area drains and runoff drains within internal roadways, subsurface piping, catch basins, oil-water separators, a holding tank, and three potential storm water outfalls to the Willamette River. All above ground storage tank areas are bermed as discussed in the facility Spill Prevention Control and Countermeasures (SPCC) Plan. The location of the NPDES outfalls are shown on the site drainage plan (Figure 2).

All storm water from operational areas of the facility is controlled onsite per NPDES storm water regulations. All retained storm water is ultimately controlled by two oil-water separators and a holding tank, Tank 3034, which are designed to eliminate the possibility of floating product or contaminated water from being discharged from the facility to the Willamette River. Under normal conditions, compliance samples are collected from Tank 3034 prior to discharge through one primary outfall as shown on Figure 2. However, during larger storm events, the capacity of the tank may be exceeded, and storm water is then discharged directly to the Willamette River through secondary outfalls at each of the two oil/water separators, also shown on Figure 2. In this case, compliance samples are still collected from the holding tank only. The NPDES permit defines when and how

many samples must be collected during rainfall discharge episodes, as well as setting effluent benchmarks on the discharge waters. A synopsis of discharge benchmarks is included in Table 2. Records of the storm water tanks and outfall inspections as well as the NPDES analytical reports are filed in the Willbridge/Linnton Terminal office. These records are kept on file for a minimum of three years. A copy of the NPDES Permit is also available at the terminal.

The aboveground storage tank secondary containment areas are controlled by manually operated block valves. These valves will remain in the closed position at all times except when an appointed facility operator has visually determined that the retained storm water is free of any sheen or discoloration and can be drained to the storm water collection system. At this time the valve will be manually opened by the operator, and immediately upon completion of draining the containment area, this valve will be closed.

3.0 MATERIAL HANDLING AT FACILITY

3.1 Material Inventory

Product type handled at the facility depends on customer demands, however, gasoline and diesel fuel are commonly stored products. Only those products which KMLT is permitted to store and handle will be allowed on the facility. Table 1 lists a typical product inventory, by tank, that may be expected at any given time at the facility.

3.2 Material Handling and Management Practices

The Linnton Terminal can receive and distribute petroleum products via pipelines and river-going tank vessels (i.e., barges and ships). Berms and drains are installed in case of potential spills during loading/offloading operations.

A paved and bermed 90-day waste storage area is located in the northwestern area of the site. This storage area is covered with a roof to reduce storm water contact, and is fenced. The facility typically generates non-hazardous industrial waste only. These wastes, which consist mostly of petroleum-impacted soil and absorbents from site clean-up activities, are removed from the site on a quarterly basis by a contracted hazardous waste transporter and are transported to approved treatment, storage, disposal and/or recycling facilities. Copies of manifests for each offsite shipment of waste are maintained at the terminal.

No vehicle maintenance is done onsite.

3.3 Potential Pollution to Storm Water

In an effort to determine the potential for contamination to the storm water system, a review of material inventory lists, storage container types, material handling practices, location of material handling operations, and storm water flow patterns within the facility was performed. Potential pollutants include petroleum hydrocarbons, oil & grease, suspended solids, and metals. Additional information detailing the types of potential pollutants found at the facility which could impact storm water if a release of a significant quantity of product occurred is summarized in Table 1. The regulatory definition of significant quantities is "the volume, concentrations, or mass of a pollutant in storm water discharge that can cause or threaten to cause pollution, contamination, or nuisance, adversely impact human health or the environment, and cause or contribute to a violation of any applicable water quality standards for the receiving water."

4.0 MANAGEMENT CONTROL

4.1 General Best Management Practices (BMPs)

By utilizing proper management techniques and practices it is possible to improve control of the identified potential sources of pollutants and reduce the number of spills/releases to the storm water system. A general list of management control practices consisting of nonstructural control measures and structural control measures has been generated. A description of each of these best management practices (BMPs) follows:

4.1.1 Non-structural Control Measures

Employee Training. Employee training programs are used to inform personnel, at all levels of responsibility, to gain a complete understanding of the processes and materials with which they are working, the health and safety hazards, the practices for preventing spills, and the procedures for responding properly and rapidly to spills of toxic and hazardous materials. The important aspects of this control measure include the following:

- Training and re-training sessions held at frequent intervals to assure adequate understanding of training goals and objectives. New employees will be trained as part of the initial facility training program. Refresher training will be conducted on an annual basis.
- Making employees aware of proper procedures on material handling, equipment operation, visual inspection, preventative maintenance, and good housekeeping.
- Making employees aware of the concept of separation of process waste and storm water.
- Transmission of knowledge of past releases and causes.
- Adequate training in release reporting procedures and spill cleanup measures (refer to SPCC Plan; emergency numbers are listed in the plan and posted in the terminal office).
- Adequate training in storm water monitoring equipment operation.

Visual Inspection. Visual inspection consists of: observing operation, maintenance, and housekeeping practices to detect variances from procedures, releases or evidence of potential releases, or other conditions that could lead to an environmental incident. Periodic facility inspections are performed by trained personnel. Once a release is noticed, the employee(s) will report the incident as outlined in the facility SPCC Plan.

Preventative Maintenance. Preventative maintenance involves examination of mechanical equipment and systems to uncover conditions that could cause equipment breakdowns, and correction of those conditions by adjustment, repair, or replacement of worn parts before the equipment or systems fail. This includes maintenance of the drainage system and storm water monitoring equipment. The preventative maintenance program includes the following elements:

- Periodic inspections and testing of such equipment and systems (components of the storm water drainage system are inspected during daily facility site walks, which are documented on a monthly form);
- Appropriate adjustment, repair, or replacement of parts as needed (oil-water separators are cleaned by an environmental contractor as needed; there are no catch-basin inserts onsite requiring maintenance but accumulated solids are removed from the basins as needed); and
- Maintenance of complete records on deficiencies and corrective actions taken on the applicable equipment and systems.

Good Housekeeping. Good housekeeping is essentially the maintenance of a clean and orderly work environment. It is a good indication of well trained personnel and best management practices being applied. A clean and orderly work area reduces the possibility of accidental spills caused by mishandling of equipment and should reduce safety hazards to personnel. Examples of good housekeeping include:

- Neat and orderly storage of materials in a proper manner and area.
- Prompt cleanup/removal of spillage.
- Provisions for storage of containers or drums.
- Prevention of accumulation of liquid and solid chemicals on the ground.

Preventive Practices. Preventive practices involve close control of plant operations and equipment to prevent spills of chemicals or products from their primary containment. These practices can be further divided into the following four measures:

1. *Monitoring*. Monitoring is the measuring of process parameters to determine operating conditions of a process or piece of equipment. Instrumentation is the method, measure, or equipment used for monitoring a particular process.

2. *Nondestructive Testing*. Nondestructive testing is the testing of a structure or vessel without it being altered, modified, or disassembled. Nondestructive testing involves the application

of measuring methods to examine the structural integrity of tanks, pipelines, pumps, valves, and fittings.

3. *Labeling*. Labeling includes general labeling and warning signs. General labeling refers to marking such items as containers, vessels, tanks, pipelines, and equipment to inform personnel of the particular product being stored or handled and the potential hazards involved. Labeling systems developed by National Fire Protection Association (NFPA), Department of Transportation (DOT), and federal EPA are used at the facility.

4. *Mitigation Cleanup*. Once a hazardous material release occurs and is contained, the material must be cleaned up and disposed of to protect plant personnel from potential health and fire hazards and to prevent the release of the substance to surface or ground waters. Mitigation cleanup measures include the practices used to physically, mechanically, or chemically remove a spilled material. They can be applied separately or jointly, and include:

   a. *Physical*. Physical methods for cleanup of dry chemicals or waste sorbents include the use of brooms, shovels, etc.

   b. *Mechanical*. Mechanical methods for removal of spills/leaks in a contained area include the use of vacuum trucks and pumps. Pumping could include pumping to a storage vessel or tank.

   c. *Chemical*. Chemical cleanup of hazardous material spills/leaks can be accomplished with the use of various sorbents and/or stabilization chemicals. Sorbents are compounds that remove materials by surface adsorption, or absorption in the sorbent bulk. Sorbents include materials such as activated carbon, polyurethane, and polyolefins.

4.1.2 Structural Control Measures

Preventive Covering. Preventive covering comprises the physical enclosure of material, equipment, or process operation. Covering is applicable to storage areas for samples, hazardous materials, and hazardous wastes. The facility 90-day hazardous waste storage area is engineered with a roof to eliminate rainwater infiltration, and berming to eliminate the potential for spilled waste to migrate outside of the area. Product samples are stored in buildings, which eliminates the possibility of rainwater contact.

Substance Containment. Substance containment measures are used to physically contain or capture a release of hazardous material. These containment measures are a second line of defense by preventing a release of material from the primary containers or tanks from reaching the receiving water. Containment will prevent both run-on and runoff. Substance containment can be further subdivided into secondary containment, flow diversion, and vapor/dust control as follows:

1. *Secondary Containment*. Secondary containment is the physical confinement of material at its original location. Secondary containment is accomplished by physical structures or by collection equipment such as a berm area or drip pan to contain the material after it has been released from its original container. Secondary containment alternatives include dikes, berms, curbs, depressed areas, storage basins, sumps, or drip pans. Secondary containment is used around all tanks at the Linnton Terminal.

2. *Flow Diversion*. Flow diversion is used to divert a flow or discharge from its original location to containment or treatment facilities. Diversion systems include trenches, drains, graded pavements, overflow structures, sewers, and culverts.

3. *Vapor/Dust Control*. Vapor/dust control is the collection, containment, or treatment of volatile fumes, vapors, gases, and particulates to prevent release to the atmosphere where deposition, due to condensation, rainfall, etc., may wash the chemicals to the ground and subsequently to the receiving water. The storage tanks and loading/offloading areas are equipped with vapor emission control devices and require Oregon Department of Environmental Quality (ODEQ) operating permits.

Mitigation Treatment. In order to apply treatment practices to a spilled material, the material first has to be collected and analyzed. Materials to be treated could include liquid materials collected in secondary containment areas, and contaminated storm water collected in diked areas. Treatment that may be considered for contaminated water would be in the wastewater treatment system.

The wastewater treatment system utilizes physical and chemical treatment processes to remove floating and settleable materials, volatile constituents, and dissolved organic materials from the wastewater prior to discharge to the sanitary sewer system.

Ultimate Disposal. Ultimate disposal measures are either associated with final disposal of potentially contaminated storm water after proper treatment or pretreatment is made, or associated with final disposal of non-contaminated storm water runoff. Disposal alternatives suitable for point sources include discharge to a receiving water, and discharge to the sanitary sewer system:

1. *Discharge to a Receiving Water*. Discharge of potentially contaminated storm water to a receiving water may be a feasible alternative after proper analysis or treatment, depending upon the water quality impact and the terms and conditions specified in the NPDES discharge permit. Disposal of potentially contaminated storm water to a receiving water would require treatment to levels consistent with applicable effluent benchmarks.

2. *Sanitary Sewer System*. Discharge to the municipal sanitary sewer system would depend on the compatibility of the material with the municipality's treatment system and local pretreatment requirements. The discharge to the municipal system would have to conform to

applicable pretreatment requirements to avoid exceeding discharge limitations specified in an Industrial Wastewater Discharge permit.

5.0 ADMINISTRATIVE PROCEDURES

Information being tracked as part of the facility storm water program will include:

- Storm water sampling and analysis information;
- Internal reporting procedures for spills of significant materials;
- Inspection records, both monthly and yearly (retained for five years);
- Follow-up procedures for response to inspections; and
- Plan inspection/review records.

This plan shall be reviewed and amended whenever a change in the facility design, construction, operation or maintenance occurs which has a potential for causing an impact to the quality of discharged storm water. This plan shall be reviewed at least once annually.

The SWPCP will also be amended if it is in violation of any conditions of the NPDES permit, or has not achieved the general objectives of controlling pollutants in storm water discharges. Any amendments to the SWPCP will be addressed by the individual or individuals who are responsible for the development and revision of the SWPCP.

Storm water management practices, including training, inspections, maintenance, sampling, and reporting, are conducted as outlined in the referenced facility SPCC Plan.

5.1 Responsible Parties

This SWPCP was prepared by the Kinder Morgan Environmental Health and Safety (EH&S) Department with the assistance of Linnton Terminal managers according to the guidelines developed by the ODEQ as outlined in NPDES General Permit No. 1200-Z. This Plan and related plans, such as SPCC and the Integrated Contingency Plan, shall be reviewed for conformance with current regulations and site specific conditions by the Kinder Morgan EH&S Department and terminal managers.

5.2 Plan Review

The SWPCP and monitoring program shall be reviewed along with the SPCC Plan at least every three years unless a change in the facility design or operation warrants more frequent review. The responsible party will immediately revise and update the appropriate document, in accordance with

Plan revision procedures, when information critical to the purpose of the document has changed. Examples of such changes are as follows:

- Changes in materials stored onsite.
- Changes in the material handling procedures.
- Changes in management practices.
- Changes in monitoring/analytical program methods.

Periodic inspections of facility operations to ensure the implementation of the SWPCP shall be performed on an ongoing basis.

5.3 Plan Revision

The SWPCP will be amended whenever there is a change in construction, operation, or maintenance which may affect the discharge of significant quantities of pollutants to surface water, ground waters, or storm drain system. The SWPCP will also be amended if it is in violation of any conditions of the NPDES permit, or has not achieved the general objectives of controlling pollutants in storm water discharges. In the event that a revision of the SWPCP is required, at a minimum the following procedures, based on the changes in the activity, will be carried out:

Changes in materials used on site.
- The material inventory will be updated for all affected operations.
- Material handling procedures will be changed, if needed.
- BMPs will be updated, if necessary.

Changes in the materials handling procedures.
- Material handling procedures will be changed, if needed.
- BMPs will be updated, if necessary.

Response to specific problems anticipated while conducting the daily operations at the facility (e.g., spills).
- Material handling procedures will be changed, if needed.
- BMPs and spill prevention plans will be updated, if necessary.

Modification of Monitoring Program due to addition of outfalls or changes in regulation requirements.
- Modification of monitoring plan to meet the new requirements.
- Additional training measures will be assessed, if necessary.

5.4 Reporting

The following is a list of actions that require a report and/or report form to be submitted to the appropriate personnel assigned to maintain the SWPCP. Each of following must be documented and forwarded to the person(s) responsible for the development and maintenance of the plan:

- Any revision to the SWPCP or Monitoring Program.
- Review of SWPCP and Monitoring Program.
- Change in qualified personnel.
- Inspection checklist and follow-up responses.
- Report of a significant spill.

5.5 Record Keeping

Records will be kept of all significant storm water pollution events (e.g., spills), in-house inspections, follow-up responses to these inspections, and any significant changes in onsite activities. These records will be maintained onsite for at least five years. A copy of the facility's SPCC Plan and Integrated Contingency Plan will also be kept onsite in an accessible area. Because the ODEQ may conduct facility inspections to verify that all elements of the SWPCP are accurate, the record keeper will make available all documents, reports and forms as required by the SWPCP.

6.0 PLAN PREPARATION/CERTIFICATION

This SWPCP was prepared by Karina Hankins of Kinder Morgan on May 30, 2007, and revised on February 7, 2008, pursuant to the requirements of the ODEQ NPDES General Permit 1200-Z. The following certification is included herein in accordance with 40CFR122.22:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Signed

ROBERT GRANADO
Name

Dir Env Compliance
Title

02.07.08
Date

7.0 REFERENCES

Kinder Morgan Liquids Terminals, LLC has prepared and maintains several Plans to be referred to in case of a spill event. Primarily, these Plans are;

- Spill Prevention, Control and Countermeasures Plan – Linnton Terminal

- Kinder Morgan Energy Partners, L.P. Integrated Contingency Plan – Prepared by Response Management Associates.

Copies of these Plans can be found in the terminal operations office and the terminal manager's office.

TABLES

Table 1

Inventory/Potential Pollutant List
Linnton Terminal

A/O 05/03/07

TANK NUMBER	NOMINAL CAPACITY (in gallons)	CONTENTS	LOCATION OF TANK OR AREA
LN-326	12,600	Diesel (boiler)	Basin B
LN-3034	137,046	Storm Water	Basin B
LN-17018	735,714	Gasoline	Basin B
LN-17020	742,896	Gasoline	Basin B
LN-17027	739,074	Gasoline	Basin B
LN-20011	856,506	Diesel	Basin B
LN-30016	1,253,784	Diesel	Basin B
LN-45028	1,889,538	Gasoline	Basin B
LN-55021	2,324,490	Diesel	Basin B
LN-55022	2,309,286	Diesel	Basin B
LN-59029	2,454,060	Gasoline	Basin B
Salt Tower	22,890	Contact Water	Basin B
Waste Storage Area	NA	Waste Drums (i.e., petroleum-impacted soil, absorbents from clean-up activities)	Basin A

Notes: 42 U.S. gallons = 1 U.S. barrel. The actual maximum working volume of the tank is less than the total interior volume of the tank based on design differences in vents and roof configurations.

Table 2

Permit Discharge Benchmarks
Linnton Terminal

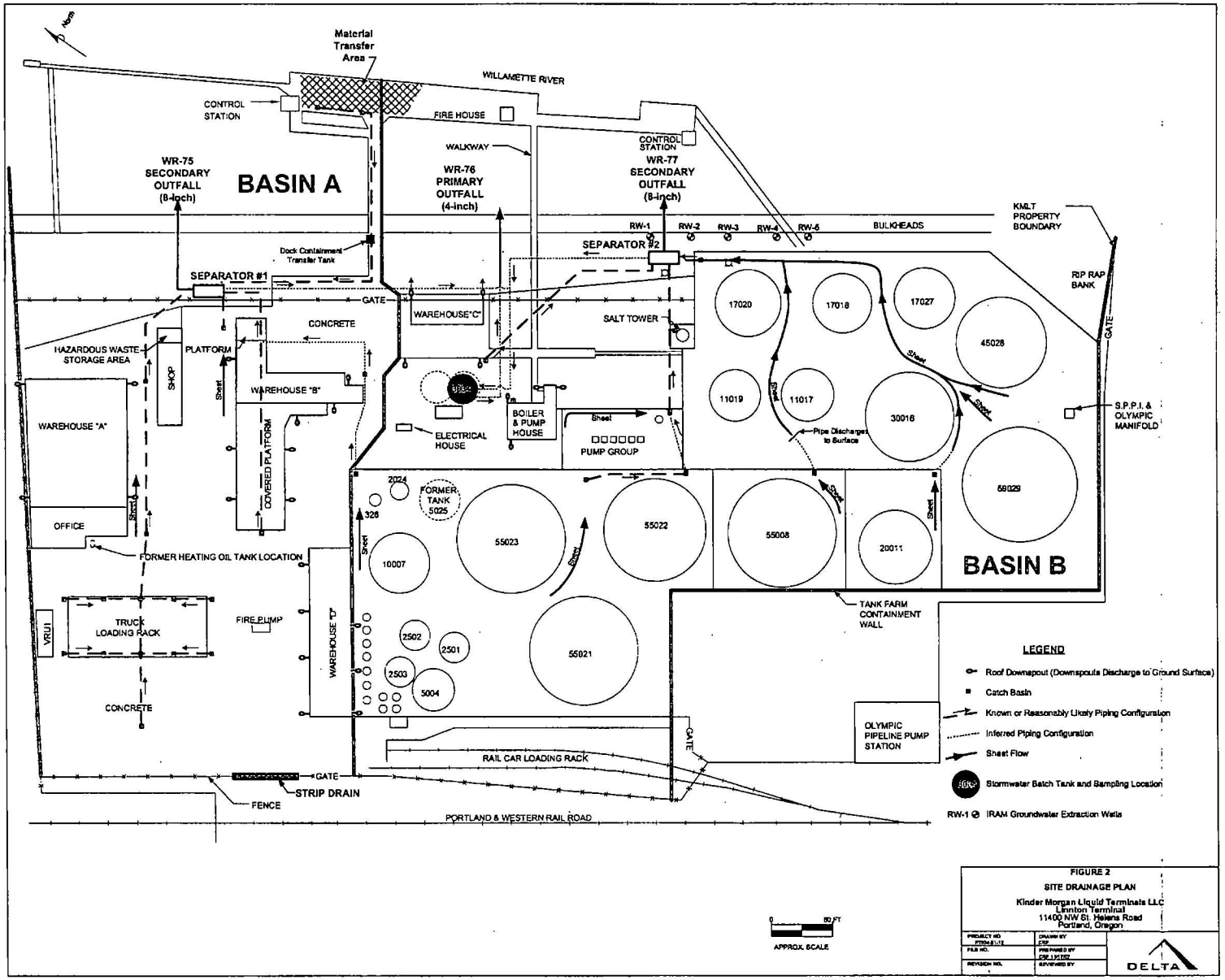
CONSTITUENT	UNITS	DISCHARGE BENCHMARK
pH	standard units	5.5 – 9.0
total suspended solids	mg/L	130
total oil & grease	mg/L	10
total copper	µg/L	0.1
total lead	µg/L	0.4
total zinc	µg/L	0.6

FIGURES

Google Maps

Address **11400 NW St Helens Rd**
Portland, OR 97231

Notes Figure 1 - Facility Location Map


North
Material Transfer Area
WILLAMETTE RIVER
CONTROL STATION
FIRE HOUSE
WALKWAY
CONTROL STATION
WR-75 SECONDARY OUTFALL (8-inch)
BASIN A
WR-76 PRIMARY OUTFALL (4-inch)
WR-77 SECONDARY OUTFALL (8-inch)
RW-1
RW-2
RW-3
RW-4
RW-5
BULKHEADS
KMLT PROPERTY BOUNDARY
Dock Containment Transfer Tank
SEPARATOR #2
SEPARATOR #1
RIP RAP BANK
GATE
WAREHOUSE "C"
SALT TOWER
CONCRETE
HAZARDOUS WASTE STORAGE AREA
PLATFORM
SHOP
WAREHOUSE "B"
WAREHOUSE "A"
BOILER & PUMP HOUSE
ELECTRICAL HOUSE
PUMP GROUP
Pipe Discharges to Surface
S.P.P.I. & OLYMPIC MANIFOLD
COVERED PLATFORM
OFFICE
FORMER TANK 5025
FORMER HEATING OIL TANK LOCATION
BASIN B
TANK FARM CONTAINMENT WALL
TRUCK LOADING RACK
FIRE PUMP
VRU
WAREHOUSE "D"
CONCRETE
RAIL CAR LOADING RACK
OLYMPIC PIPELINE PUMP STATION
STRIP DRAIN
FENCE
PORTLAND & WESTERN RAIL ROAD
17020
17018
17027
45028
11019
11017
30016
59029
55023
55022
55008
20011
10007
55021
2024
326
2502
2501
2503
5004
Sheet
LEGEND
Roof Downspout (Downspouts Discharge to Ground Surface)
Catch Basin
Known or Reasonably Likely Piping Configuration
Inferred Piping Configuration
Sheet Flow
Stormwater Batch Tank and Sampling Location
RW-1 IRAM Groundwater Extraction Wells
0
80 FT
APPROX. SCALE
FIGURE 2
SITE DRAINAGE PLAN
Kinder Morgan Liquid Terminals LLC
Linnton Terminal
11400 NW St. Helens Road
Portland, Oregon
DELTA